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Resumo	Despite the implementation of conjugate vaccines in several countries, S. pneumoniae continues to pose a great burden worldwide, causing around 1 million annual deaths. Pneumococcal proteins have long been investigated as serotype-independent vaccines against this pathogen, with promising results. However, it is a consensus that one antigen alone will not be sufficient to provide long-term protection with wide coverage. Amongst the most well studied pneumococcal proteins are PspA and pneumolysin (Ply), two major virulence factors required by the bacterium for successful invasion of host tissues. PspA is highly immunogenic and protective, but it is structurally variable; pneumolysin is conserved among different pneumococci, but it is toxic to the host. To overcome these limitations, N-terminal PspA fragments have been genetically fused to non-toxic pneumolysin derivatives (PlD) to create PspA_PlD chimeras. Mouse immunization with these fusions confers protection against pneumococcal strains expressing heterologous PspAs, which correlates with antibody-induced complement C3 deposition on the surface of multiple pneumococcal strains. Analysis of mutant strains lacking PspA or Pneumolysin shows that both proteins contribute to the antibody-mediated enhancement in complement deposition induced by the fusion. These results expand previous data evaluating PspA_PlD and demonstrate that the fusion combines the protective traits of both proteins, inducing antibodies that efficiently promote complement deposition on multiple strains and cross-protection.
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